WHAT IS CLAIMED IS:

1. A video encoder for encoding a video signal through discrete cosine transform (DCT) and motion estimation, the video encoder comprising:

a motion estimator for estimating motion of an individual from an input video signal, and calculating a motion vector of the individual;

a speaker region detector for detecting a speaker region representing a contour of a speaker from the motion vector;

a DCT section for calculating DCT coefficients by DCT-transforming a video signal outputted from the motion estimator;

a face region detector for detecting a face region of the speaker from the speaker region based on the DCT coefficients, and generating a differential quantization table by distinguishing the detected face region from non-face regions;

an adaptive bit rate controller for differentially setting a quantization step size for quantization based on the speaker region; and

a quantizer for quantizing the DCT coefficients according to the quantization step size and the differential quantization table.

2. The video encoder of claim 1, wherein the adaptive bit rate controller differentially sets the quantization step size based on one of the speaker region and the face region.

3. The video encoder of claim 2, wherein the motion estimator estimates motion of the individual by comparing a current frame of the video signal with a reference frame, obtained by encoding a previous frame of the video signal and then compensating for motion of the coded previous frame at intervals of pixels on a pixel-to-pixel basis, to detect a most similar pixel, and calculates a motion vector corresponding to the estimated motion of the individual.

4. The video encoder of claim 3, wherein the speaker region detector calculates a background image vector and a foreground image vector according to a size and a direction of the motion vector from the motion vector, and detects a speaker region from the background image vector and the foreground image vector.

5. The video encoder of claim 4, wherein the face region detector compares a DC (Direct Current) value of a red component with a DC value of a blue component for a same region from DCT coefficients corresponding to the speaker region detected by the speaker region detector among DCT coefficients generated by the DCT section, wherein if the red component is greater than the blue component and also greater than a prescribed threshold value, the face region detector determines as a face region of the speaker a region corresponding to the compared DCT coefficient out of the speaker region.

6. The video encoder of claim 5, further comprising a variable length coder for performing variable length coding on the DCT coefficients differentially quantized by the quantizer.

7. The video encoder of claim 6, further comprising:

a dequantizer for performing dequantization on the DCT coefficients differentially encoded by the quantizer;

an inverse discrete cosine transform (IDCT) section for performing IDCT on the dequantized DCT coefficients; and

a motion compensator for compensating for motion of the individual by comparing an IDCT-transformed previous input video signal with an IDCT-transformed input video signal.

8. The video encoder of claim 7, wherein the motion compensator calculates the motion vector for an input video signal based on the motion-compensated

video signal from the motion compensator.

9. A video signal compression method for image communication using a video encoder for encoding a video signal through discrete cosine transform (DCT) and motion estimation, the method comprising the steps of:

(a) estimating motion of an individual from an input video signal, and calculating a motion vector of the individual;

(b) detecting a speaker region representing a contour of a speaker from the motion vector;

(c) calculating DCT coefficients by DCT-transforming the video signal;

(d) detecting a face region of the speaker from the speaker region based on the DCT coefficients, and generating a differential quantization table by distinguishing the detected face region from non-face regions;

(e) differentially setting a quantization step size for quantization based on the speaker region; and

(f) quantizing the DCT coefficients according to the quantization step size and the differential quantization table.

10. The video signal compression method of claim 9, wherein step (e) comprises the step of differentially setting the quantization step size based on one of the speaker region and the face region.

11. The video signal compression method of claim 10, wherein step (a) comprises the step of estimating motion of the individual by comparing a current frame of the video signal with a reference frame, obtained by encoding a previous frame of the video signal and then compensating for motion of the coded previous frame at intervals of pixels on a pixel-to-pixel basis, to detect a most similar pixel, and calculating a motion vector corresponding to the estimated motion of the individual.

12. The video signal compression method of claim 11, wherein step (b) comprises the step of calculating a background image vector and a foreground image vector according to a size and a direction of the motion vector from the motion vector, and detecting a speaker region from the background image vector and the foreground image vector.

13. The video signal compression method of claim 12, wherein step (d) comprises the step of comparing a DC (Direct Current) value of a red component with a DC value of a blue component for a same region from DCT coefficients corresponding to the speaker region among the DCT coefficients, and determining a region corresponding to the compared DCT coefficient out of the speaker region as a face region of the speaker if the red component is greater than the blue component and also greater than a prescribed threshold value.

14. The video signal compression method of claim 13, further comprising the step of performing variable length coding on the DCT coefficients differentially encoded in step (f).

15. The video signal compression method of claim 14, further comprising the steps of:

performing dequantization on the DCT coefficients differentially encoded in step (f);

performing inverse discrete cosine transform (IDCT) on the quantized DCT coefficients; and

compensating for motion of the individual by comparing the IDCT-transformed input video signal with an IDCT-transformed input video signal.

16. The video signal compression method of claim 15, wherein step (a) comprises the step of calculating the motion vector for an input video signal based on the

video signal motion-compensated in the motion compensation step.